

beech-maple forests of the Chicago region. Thus it is possible to make rather accurate comparisons of the conditions within the forests of the east and the west and to obtain quantitative demonstration of the equal mesophytism of the latter.

The differences in the evaporating power of the air in the different associations are found to be quite sufficient to show that this factor must be an important one in causing succession. Such accumulations of quantitative data as are contained in the present paper mark the advance of ecology along lines tending toward greater exactness, and it is to be hoped that they will become increasingly numerous.—GEO. D. FULLER.

Phylogeny of Filicales.—In continuing his studies of the Filicales, BOWER²⁹ has investigated *Blechnum* and its allies, and finds that the characters of the sori are of most importance in suggesting phylogenetic lines. The genus is treated in its wider sense, as comprising the subgenera *Lomaria*, *Salpichlaena*, and *Eu-Blechnum*. In *Lomaria* the indusium appears marginal, while in *Eu-Blechnum* it becomes apparently intramarginal owing to the formation of a new structure which BOWER calls the “flange.” He produces evidence from a comparison of the development in numerous species that the protective organ is phyletically the same throughout the genus *Blechnum*, and he calls it the “phyletic margin.” The general conclusions reached are as follows.

The *Blechnum*-like ferns and their derivatives represent a true phyletic sequence, which is traced to the region of the Cyatheaceae, the actual point of contact probably being *Matteuccia intermedia*, a fern of North China recently described by CHRISTENSEN. From this source several divergent lines have proceeded, the main line leading through § *Lomaria* to *Eu-Blechnum*, involving the origin of the “flange” and the diversion of the “phyletic margin” to indusial functions. Minor lines led to *Acrostichum*-like derivatives in *Stenochlaena* and *Brainea*. Interruption of the fusion sorus, occurring as an anomaly in *Blechnum*, led to the conditions shown in *Woodwardia* and *Doodia*. An outward arching of the fusion sorus of *Blechnum*, ultimately combined with interruption, gives the key to the origin of *Scolopendrium*. An outward swinging of the interrupted fusion sori, variously combined with archings and new formations of partial sori, and various branchings of the leaf, give the several types of *Asplenium*. The relation of *Plagiogyria* to the whole series is regarded as problematical, but it is suggested that it is an isolated and relatively primitive genus.—J. M. C.

Evolution of inflorescence.—PARKIN³⁰ has studied inflorescence from the evolutionary point of view, a subject which in his judgment has been “strangely

²⁹ BOWER, F. O., Studies in the phylogeny of the Filicales. IV. *Blechnum* and allied genera. Ann. Botany 28: 363-431. pls. 22-32. figs. 26. 1914.

³⁰ PARKIN, J., The evolution of the inflorescence. Jour. Linn. Soc. Bot. 42: 511-563. 1914.